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R&RS*Research and Reference Services Project***R&RS**

**THEORY AND PRACTICE
IN SUSTAINABILITY AND
SUSTAINABLE DEVELOPMENT**

**by Diane Russell
Research and Reference Services Project**

**SUSTAINING THE VISION:
Lessons for USAID's Move Toward Sustainability
and Sustainable Development
A Series of Issue Papers
by
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- PAPER 1: Sustainability, Sustainable Development
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- PAPER 2: Economic Growth and Sustainability . . November 1994/PN-1994/PN-ABU-374
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- PAPER 4: Sustainability in Agriculture and Natural
Resource Management December 1994/PN-ABU-366
- PAPER 5: Theory and Practice in Sustainable Development . . January 1995/PN-ABU-367

OVERVIEW OF THE SERIES

"We humans have a kind of tunnel vision. We only see what we can use. We have not been able to see until recently that it's useful to maintain the integrity of the organism." -- Howard Rheingold

Prepared by Diane Russell, Research Manager, Research and Reference Services Project

This series of issue papers was prepared as a complement to the U.S. Agency for International Development (USAID) strategy papers and the strategy implementation guidelines to assist USAID's move toward sustainable development. It provides decisionmakers with information on definitions, concepts and lessons learned in sustainability and sustainable development from inside and outside USAID, and examines how these concepts are applied within different sectors. The reader will find that, in this series, there are different types and levels of analysis applied to different sectors. This variation reflects the materials available and used, the nature of the sectoral issues, and the viewpoints and experiences of the authors.

The series is meant to stimulate dialogue within the Agency that will lead to sharing resources and experience. Given the complexity of the topic and vastness of the information resources, however, the papers cannot present a definitive treatment of each subject. In addition, they do not express the views of the Agency nor has it surveyed, in a comprehensive way, attitudes and level of knowledge about sustainability within USAID.

The research has involved reviewing USAID and non-USAID literature, analyzing project information from the Development Information System (DIS), working with individuals from the former International Development Management Center (IDMC) and the IRIS (Institutional Reform and the Informal Sector) Project to get a sense of the history and scope of sustainability within USAID, and interviewing informants within and outside the Agency.

The series begins with Jim Esselman's paper on sustainability and health. As there was an extensive history of USAID experience in relation to sustainability in this sector, the paper concentrates mainly on the Agency experience. The final section of the paper brings up some key issues in relation to health projects and sustainable development.

The second paper, by Dana Wichterman, on economic growth and sustainability, presents both USAID and other donor experience in designing and implementing sustainable economic growth projects, highlighting the difficulty in finding consistent definitions and sustainability materials in this diverse sector. This paper also presents recent discussions on economic growth and sustainable development.

Democracy projects, democracy, and sustainability are addressed in the third paper, in which Heather McHugh looks at these issues through various lenses, and as critical elements of sustainable development. As a relatively new concern for USAID, democracy and governance activities are being defined and fleshed out, and recent lessons are presented.

"Green" environmental issues relating to agriculture and natural resource management, discussed in Diane Russell's paper, have the most robust theoretical literature relating to sustainability and sustainable development, but USAID lessons are relatively new. This fourth paper thus applies the most recent lessons and models to the elaboration of the strategies for sustainable development.

The final paper draws from these works and others to show how these lessons, models and debates can be used by USAID decision makers in the strategic and analytic process of sustainable development.

A Vision

Sustainable development involves decisions about what benefits need to be sustained over what time frames with what resources. As change is unpredictable and hard to understand even in our own society, development planning theory shifts toward integrative/multilevel analysis of patterns of change, and away from models that limit thinking to one trajectory of change or one mode of problem solving. As sustainable development integrates beneficiaries into the planning process, decision and action become more flexible and mobile.

Definitions

Sustainability is:

- a **measure** of how the growth, maintenance, or degradation of a resource or set of resources affects a population's ability to sustain itself. **Indicators** are used to measure these effects. A resource can be natural or human, and includes knowledge, technical, financial and other social systems.
- a **property** of processes, investments, technologies and systems as they affect resources available to a population over time. Processes such as policy reform, investments made by donors, governments or other groups, technologies such as improved crop varieties, and systems such as a land tenure or judicial systems have an **impact** on access to, valuation and sustainable use of resources. The extent of local participation in and ownership of a process, investment decision, technology development and system is seen to be crucial to sustainability.
- fluid and ever-changing: there are **tradeoffs and substitutions** among resources and systems as valuation and access change over time. Nevertheless, many theorists of sustainable development argue that natural resources are, ultimately, finite and that certain processes, investments, technologies or systems can quicken or slow the pace of resource depletion.

In its broadest interpretation, **environmental** sustainability refers to the measurement of change in the resource base that supports existing populations. The renewal capacities of natural resources are determined by growth and development cycles, which can be altered through technology innovations. Development investments for a given population must calculate the rates of resource degradation and regeneration, and costs and benefits of different technology packages, in relation to the resources needed and available. An example of a key resource to be sustained is soil fertility, which can be sustained by combinations of fallowing land (land intensive), technology infusions (capital intensive), or the adoption of sustainable agroecological systems (labor intensive).

Economic sustainability is the ability of a population to generate revenue to maintain itself in a market economy and produce a surplus to invest in security, research and development, infrastructure, and social safety nets. At the local level, it is the ability to maintain food and income security so as not to deplete the resource base and drive away young people. Balancing investments in government and community level activity, public and private sectors, and gauging growth potential in relation to environmental and equity concerns, is part of the sustainable development process.

Resources are valued and used within the human framework of ideas and social structures.

Social sustainability relates to the soundness, richness and flexibility of organizations and institutions that govern access to and transmission of resources. Supporting institutional sustainability does not mean sustaining specific institutions or organizations, however, but helping people to build and strengthen frameworks -- legislative, regulatory and financial -- that allow sound institutions to flourish. Sound institutions enable societies to use and allocate resources in a transparent and efficient manner.

Benefit Sustainability

Within the development community, sustainability refers to the ability of benefit flows to be maintained after project funding ceases. It is important to note that benefit sustainability does *not* imply that the project itself continue. In fact, benefits are usually best sustained by beneficiaries themselves through NGOs, governments, or community groups, after the initial USAID investment. Donors may need to sustain benefits over a longer time frame, however, to reach particularly disadvantaged, marginalized or poorly organized beneficiary populations. The calculation of benefit sustainability -- what needs to be sustained over what time frame -- is discussed in Paper 5 in this series.

A great deal of attention has focused on benefit sustainability over the years and much is known about how to accomplish it, but there has been limited success in refocusing and redesigning for sustainability.

Financial Sustainability

Financial sustainability is a component of benefit sustainability that addresses issues of management capability for eventual self-financing for development investments. Financial and benefit sustainability are components of planning for sustainable development, which, as noted, is an analytic *process* rather than a development outcome.

Sustainable Development

The term "sustainable development" was first used in the World Conservation Strategy in 1980 and widely disseminated by the Brundtland Report (WCED 1987). Within USAID, the concern for sustainability emerged from the experiences of integrated rural development and infrastructure projects that involved significant investment but were not supported by the local population or the government after project funding ceased (DAI 1982). Thus USAID's major emphasis until recently has been on benefit sustainability.

With the publication of Strategies for Sustainable Development (USAID 1994), the Agency entered a new era where benefit sustainability, a goal that still needs to be addressed, was linked to the process of sustainable development. The strategy papers defined sustainable development as "characterized by economic and social growth that does not exhaust the resources of the host country; that respects and safeguards the economic, cultural and natural environment; that creates many incomes and chains of enterprises; that is nurtured by an enabling policy environment; and that builds indigenous institutions that involve and empower the citizenry" (USAID 1994).

Sustainable development is the process in which USAID and host country stakeholders analyze, plan and negotiate USAID's investments in sustaining particular benefits over a given time-frame. It links micro-level benefits with macro-level societal goals and objectives (Diwan 1994). As discussed in Paper 5, the overarching goals include increasing efficiency in the use of resources, alleviating stress, and promoting equitable use of resources, as well as preserving a resource and knowledge base for future generations (intergenerational equity).

This process is grounded in multiobjective analysis, participation, and inclusion. The investment decisions must also be analyzed in light of U.S. and international objectives for sustainable development. Thus, sustainable development is defined at the highest level and includes such considerations as national and international security, global assessment of resource use and depletion, development of and access to technology, information infrastructures, and competition over access to natural resources and markets.

SIX MYTHS ABOUT SUSTAINABILITY/SUSTAINABLE DEVELOPMENT

1. Sustainable development is an outcome or an activity

Sustainability in development is an organizing principle and a process rather than a goal. It is the process by which USAID and host country stakeholders analyze, plan and negotiate USAID's investments in sustaining particular benefits over a given timeframe.

2. Sustainability is a new concept

Benefit sustainability is specifically addressed as early as 1979 in the USAID literature and concern has existed for some time.

3. USAID has not well defined the concept

Guidelines and other detailed discussions have been available since at least 1982, and there has been significant consensus about problems in and pathways to improvement in benefit sustainability (DAI 1982).

4. Sustainability is not a problem with USAID projects

A recent study found that, overall, only 18 percent of 44 successful USAID projects had a high probability of achieving benefit sustainability (IRIS 1994). The World Bank sustainability rate was determined to be about fifty percent (CDIE 1990). Not all project benefits *should* be sustainable because projects may be experimental or instructional -- leading to sustainable investments in the long term -- but USAID managers think the proportion should be much higher (IRIS 1993).

5. USAID is basically unconcerned with sustainability -- it is just a new buzz word

For several years, USAID has expressed significant concern about, although not always agreement on, the utility of the concept of sustainability. Asia Bureau managers responding to a questionnaire indicated a need for "short, distilled, 'lessons of experience', evaluation findings and 'how to do it' material; information on financial systems and financial mechanisms to promote sustainability; and technical guidelines for sustainability analysis, design and evaluation" (IRIS 1993).

6. A focus on sustainability doesn't change anything

Sustainability is not the same as achieving project goals. A focus on sustainability of necessity involves a reorientation of development priorities and approaches. The intensity of this shift is still under debate.

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THEORY AND PRACTICE IN SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT

"Far from being a monolithic concept, sustainable development will vary over space and time, depending upon the development status of a country or region and a complex of other factors relating generally to the balance between demand and supply potential. ...The transition to a sustainable state is a process that requires the development of a new consciousness or value system." --Pierce 1992

Prepared by Diane Russell, Research Manager, PPC/CDIE/DI

A. Overview

This section covers theoretical and practical issues that USAID confronts in implementing concepts of sustainability within the process of sustainable development. First, a brief discussion of current theories that undergird the concepts is presented. Second, the implications of the concepts for different levels of activity and sectors relevant to USAID investments are examined. Finally, challenges facing the Agency in its move toward sustainability and sustainable development are reviewed.

B. Theories of Sustainability

The concept of sustainability was first employed in relation to natural resources and how they should be used. Many theorists feel that natural resources are finite and cannot support the world's projected population at current levels of resource utilization and growth. There are those theorists who argue, however, that resources should be defined more broadly to include stocks of technology and know-how. As knowledge and human capability have increased over time, resources have actually increased (Taylor 1993). Sustainability then involves sustaining free markets and human knowledge capacities. In the first view, the threats to sustainability come mainly from overpopulation and consumption, while in the second view the threats to sustainability come from bad policies.¹

There is debate about the role of technology development and transfer in sustainable resource use. As a recent World Bank study put it -- "Technological optimism may or may not be appropriate: it is certainly contested in the discourse on sustainability" (Norgaard 1992: i). In any case, most theorists agree that the sustainable development process goes beyond technology transfer and centers on the better use of local resources, be they for research, technology design, or development implementation (Sharif 1992).

A more nuanced view would include looking at the creation and destruction of certain types of knowledge (indigenous or place-specific versus scientific or universal). In addition, no known market operates perfectly so realistic appraisal of the relationship between government, markets and resources is necessary. It may also be presumptuous, even dangerous, to suppose that humankind can replace or even adequately understand the diversity and complexity of natural systems.

Thus sustainability has been viewed as "a broad set of concepts which should serve to guide research in all of its facets. It is not a set of technologies" (Graham-Tomasi 1991). It has been defined as "the ability to maintain a given flow over time from the base upon which that flow depends," and as "primarily an issue of intergenerational equity" (Norgaard 1992). It involves calculation of the balance between present and future use of a resource or set of resources, as well as debate over the valuation of resources in relation to different uses.

Within the development community, the notion of sustainability came to be applied to financial resources, including project funds, indicating that projects and donor support are not limitless and must be used efficiently in ways that local actors support so that benefit flows are sustained. Randal Thompson synthesized USAID lessons to show how benefit sustainability is best attained (see box).

Components of Benefit Sustainability

- analysis of host government policies that support or constrain program objectives;
- a national and/or local commitment to project goals;
- managerial leadership that helps improve policies, applies new technologies, sets goals, mobilizes support from political leaders and other organizations and beneficiaries, and effectively directs internal program administration;
- a management style that stresses collaboration at all staff levels, risk sharing, and a reward system consistent with learning orientation;
- financial resources that cover program operational costs;
- a program technology appropriate to the recipient country's financial, ecological, and institutional capabilities, well integrated into the country's social and cultural setting;
- community participation;
- ecological soundness;
- technical assistance oriented toward transferring skills and increasing institutional capacity and ability of project to provide training to transfer the skills needed for capacity building;
- a perception by the host country that the project is "effective";
- the degree of the program's integration into the existing institutional framework; and
- analysis of external political, economic and environmental factors (CDIE 1990).

Measuring Benefit Sustainability

In collecting information for the design of the USAID/Asia Bureau's *Project Sustain*, IDMC/IRS found that, in 1986, the World Bank classified projects as "sustained" if the reestimated economic rate of return five years after project completion was greater than or equal to the ERR calculated at the completion of project implementation. In 1988, a study found only 11 percent of USAID projects to have a strong likelihood of being sustained after USAID funding. A 1989 review of FY1987 and FY1988 evaluations reported that 36 percent highlighted sustainability concerns and, in 1992, IDMC analyzed 71 USAID impact evaluations and found that 48 percent of the projects were sustainable.

A review of the quality and coverage of 268 USAID evaluations, FY 1989 and FY 1991, undertaken by Management Systems International, however, found that only nine percent of projects were given a high probability rate for being sustained after USAID funding ceased. Of 44 final evaluations in which teams concluded that projects would partially or completely achieve their purpose, only 18 percent were judged to be highly sustainable (IRIS 1994).

◆ ENI Bureau agribusiness projects incorporate benefit sustainability by:

- ◆ carrying out extensive surveys of farmers
 - ◆ employing business/market analyses
- ◆ designing cooperative projects with U.S. businesses
- ◆ providing loans and credit for farmers and business people

Linking Sustainability and Sustainable Development

Even an operational definition of sustainability must include additional social objectives (Graham-Tomasi 1991:83). Sustainability of particular benefits flowing from projects or programs should be linked to careful analysis of a country's or region's potential for and constraints to sustainable development. Sustained benefits help a community, country or region move toward self-sustained development by reducing stress on the population and/or environment, increasing productivity -- producing more for less -- or providing more equal access to resources, thereby reducing stress and increasing productivity in the long term.

As defined by the NGO community, sustainable development encompasses "poverty alleviation and protection of the earth's resources" (InterAction 1993). It is a development

path "that maximizes the net long term benefits to mankind [sic]" through participation and multidisciplinary involvement in program and project design.²

Some analysts claim that sustainability calls into question our notions of development. Does development necessarily involve economic growth? Does enhanced quality of life more explicitly meet the definition of development than growth in quantity (Wilcox 1992; Munn 1992)? Is the opposite of growth stagnation--or is it evolutionary change?

The concept of growth as the foundation of development has been challenged:

We cannot "grow" our way into sustainability (Goodland and Daly 1993).

Many development practitioners, however, feel enhanced quality of life cannot occur without economic growth. Developing countries do not want their growth to be stymied by developed country concern for sustainability. People from "developed" countries fear declines in their standard of living.³ Part of the concern stems from a misunderstanding of sustainability. Sustainability does not mean attaining a non-growth equilibrium.

The problem facing society today is that the environment is changing more rapidly than ever before, making it difficult for the evolutionary process to keep pace...[thus] Some growth is permissible and indeed desirable provided that it is not at the expense of natural and managed ecosystems and of socioeconomic systems; it is not at the expense of reducing, without good cause, society's inheritance of natural resources (Munn 1992:2727).

Sustainable development involves strategies for assessing what benefits need to be sustained over what time frames with what resources. As change is unpredictable and hard to understand even in our own society, development planning theory must shift toward integrative/multilevel analysis of patterns of change, and away from models that limit our thinking to one trajectory of change or one mode of problem solving. As sustainable development integrates beneficiaries into the planning process, decision and action become more flexible and mobile.

C. Sustainability By Sector

In papers 1-4 of this series, sustainability and sustainable development in four key development sectors are examined in depth. There is an urgent need, however, to examine

Participation is a critical theme in the sustainability literature. Some thought has been given to the relationship between increased participation and type and goal of project, as well as the trade-offs between increased participation and management complexity.

³ High levels of consumption and energy use, and the waste that consumption generates, are legitimate concerns for the sustainable development of industrial and advanced developing countries.

how the sectors relate to one another and to the whole. A strictly sectoral or unidimensional approach to sustainable development is not viable. The relations among sectors -- e.g., the impact of agricultural policy on health status; or educational level on population growth -- must be factored into any activity focusing on one of these sectors. This section presents a few examples of interactions and tradeoffs made in sustainable development analysis.

Tradeoffs and interactions are complex, and research is testing many hypotheses concerning the relations between sustainable political and economic development. Programs to develop democracy can at times undermine sustainable economic development (paper 3), although a recent World Bank research report (1993) noted that there is no support for the hypothesis that democratic regimes are not conducive to growth (see also *The Economist*, August 27-September 2, 1994: "Democracy Works Best"). Support for NGOs can lead to "brain drain" of key governmental functions and the transformation of NGOs into service providers rather than advocates (CDIE 1995).

Recent findings from the World Bank (1993) indicate that, in a democratic context, governments with close ties to the labor movement are more likely to be able to sustain structural adjustment programs than business-oriented governments. Regime instability rather than type of regime influences growth, and there appears to be a causal link between income distribution and sociopolitical instability and between sociopolitical instability and lower investment. Economic restructuring, geared to strengthening economies, may weaken the state to the extent that it cannot implement the programs yet without restructuring the economy is unable to sustain key benefits..

Different sectors have different sustainability concerns. In theory, health care is well positioned to achieve benefit sustainability, as good health is widely valued. Issues and choices arise, however, when technology and other factors drive up the cost of health care. High cost forces people to forgo preventive measures (e.g., immunization, prenatal care) that are in the long run cost effective for society. Health benefits that meet individuals' immediate health needs may be made financially sustainable more easily than those that provide a public health service like clean water and sewage systems. Thus public works have to be sustained by more complex mechanisms involving communities, governments and the private sector.

Population growth affects all dimensions of sustainability. On the one hand, growing populations increase stress and contribute to the need for planning for sustainable resource use. On the other hand, they provide an impetus for technological change (Boserup 1965). Sustainable family planning financing is a complex issue, as some groups within society may value high levels of fertility and discourage efforts to sustain or even promote family planning because they wish to "increase their numbers," while others look at the costs to individual women and their children of poor birth spacing and health, as well as overall resource depletion.

Natural resources and land can be controlled by communities, individuals, the state, or a combination of these entities. Each pattern presents challenges for sustainability. If communal, organizations and institutions must be highly integrated in order to cope with daily conflict and longterm generational transfers, as well as to unite people in times of stress (e.g., vanishing traditional tenure systems in which every resource is carefully mapped in relation to family group). In today's global political economy, it is virtually impossible to maintain this type of integrated system, which depends upon the ability of elders and other "managers" to regulate and persuade. If control is maintained by individuals and firms, market forces, abetted by "bad" policies, and struggles for access can eclipse sustainable investment. The most problematic scenario -- one found throughout the developing world -- is control and ownership of resources by a government lacking both the means and the will to safeguard the resources.

The economic growth and democracy and governance sectors are by far the most difficult to define in terms of sustainability. Rather than dealing with concrete "goods" to be sustained, they deal with access to and changes in the nature of goods and services. Policy reform has been considered the linchpin of sustainability in these sectors, but more attention is now being paid to stakeholder analysis, policy implementation and institution building. Too often, a reform may be "successful" in the short term but face unexpected consequences because of shifting markets and political alliances. Balancing growth and equity is the critical issue: the role of a relatively prosperous middle class to the long term sustainability of the industrialized democracies is a prime example. Yet developing countries enter the global arena in an epoch of dwindling natural resources, when competitive success is determined by access to rapidly evolving technology, and by flexibility and mobility.

While increasing openness and accountability can cause confusion and stress in the short term, it is theorized that democratic modes of political organization are better positioned for sustainable development in the long term.⁴ One direct link between environmental sustainability and democracy is the extent to which participatory processes allow affected populations to voice their concerns. This link can also bring about the NIMBY (Not in My BackYard) effect, however, and thus must be complemented by sound policy analysis. In terms of pollution, democracies tend to use more modern, thus cleaner technologies, but generate more solid and toxic waste. Birthrates go down but energy use per capita rises enormously. Thus challenges to sustainable development do not disappear but change with transitions in governance and economic base (e.g., manufacturing to service economy).

Growth in participation adds complexity to already overburdened and underfinanced developing country institutions that design and implement policies and programs, as groups compete for access to resources that were formerly out of reach. Yet, without participation, it is impossible to know how specific efforts are valued and will be adopted and adapted in the long term. Too often, technologies have been designed with little attention to end-users and

⁴ As democracy can take many culturally and historically determined shapes, however, the concept has to be broken down into constituent parts, and move from being normative to being descriptive.

to complementary infrastructure (markets, roads, education, extension) that would enable or encourage the end-user to adopt them.

D. Objectives and Levels

In practice, development planners work within multiple scenarios involving domestic and international growth and trade, equity and human rights, political leverage, security and immediate survival. These scenarios can be dealt with through construction of an overarching framework for sustainable development that comprises three major objectives: increasing productivity, promoting more equal access, and reducing stress.

Increasing productivity: Expanding a country's capacity to use external and internal resources more efficiently to achieve self-sustained growth. Activities focused on monetary reform, improved technology, research and development, training and education, market development, and analyses of resource and land use can promote this goal. Examples include currency adjustments, non-traditional export promotion, and integrated pest management research and extension.

Promoting more equal access: Encouraging equitable distribution to attack endemic poverty and marginalization that undermine both social and environmental sustainability. This goal is exemplified by activities and approaches that promote community control, participation, and the building of civil society. For example, reforms that involve giving local users more secure control over resources are widely considered to be both economically and environmentally beneficial. Politically, however, these reforms can be extremely difficult to implement, and thus must be seen as long-term, multifaceted and labor-intensive efforts.

Reducing stress: Identifying and promoting technologies and policies that alleviate stress on the resource base. Activities or programs that promote conservation in the appropriate local contexts as well as those that relieve the causes of stress (population growth, ethnic conflict, extreme poverty) meet this objective. Emergency aid relieves stress but must be tied to one of the other objectives so as not to increase stress in the long run by creating unsustainable channels of resource distribution.

CONCERNS FOR SUSTAINABLE DEVELOPMENT AT DIFFERENT LEVELS⁵

Activity level

Determine how benefits will be sustained
Determine how the activity will contribute to sustainable development (as analyzed by USAID and host country planners)
Incorporate sustainability principles such as self-financing
Link duration of effort to sustainability goals
Analyze the effect of budget and other management cycles on sustainability and sustainable development
Study effect of procurement regulations and accountability requirements
Integrate evaluation/research into activities

Institutional/Organizational

Evaluate existing organizations for potential to meet development goal
Evaluate overall viability and vulnerability of organizations
Assess local institutional capabilities and recommend measures to improve performance in meeting development goals
Analyze organizations' role in forming, maintaining, and transferring assets to future generations for the target population

Sector or sub-sector

Analyze sector trade-offs and linkages
Determine range of U.S. knowledge and technical contribution
Develop and transfer production, resource monitoring and exploitation technologies that enhance sustainability while assuring that complementary infrastructure is in place
Use local knowledge and practice to shape sustainable development concepts and sustainability measures

Country level

Coordinate donor and host country dialogue systems
Develop strategic planning exercises with host country
Analyze the sustainability of key governmental organizations and the government itself
Identify NGOs for collaboration and appropriate roles for NGO activity
Analyze options, competing priorities and tradeoffs within ministries, organizations

Regional/Global

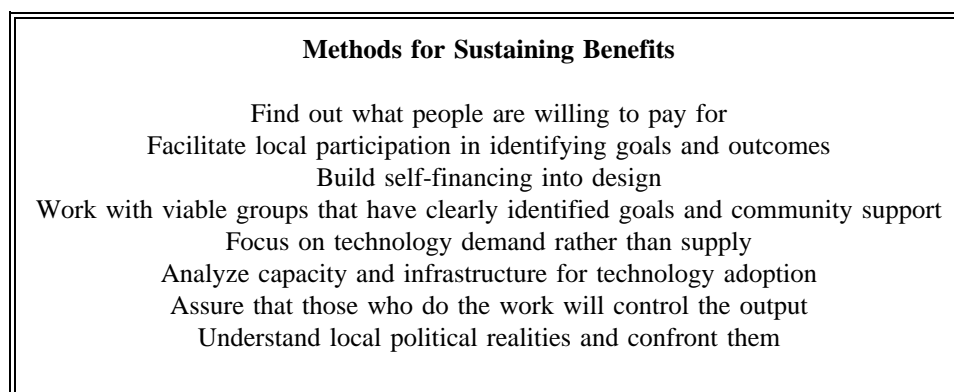
Develop mechanisms for understanding sustainable resource use
Map world-wide inequities in access to resources and resource exploitation technology
Measure resource depletion (knowledge systems, institutional and analytical capabilities as well as natural resources)

The economic, political, environmental and social (including institutional) analyses could be folded into a single sustainable development analysis that considers all variables in light of duration and funding of effort.

Different questions emerge at different levels of analysis. Sustainable development can be conceived of as a system in which impacts from all levels feed back to change the entire system. Thus policy affects local level participation, which affects resource use which may change policy. It is a dynamic process of balancing objectives, stakeholders and resources.

Activity level:

- Determine the relative importance of the demonstration effect versus sustainability. An activity may place emphasis on demonstrating a new technology or idea or it may support existing or accepted technologies, organizations or ideas. The demonstration or experimental approach may be justified in some cases but the risks to sustainability should be clearly outlined.
- Determine how benefits will be sustained after USAID funding has ceased:
 - Defining impact that local people can measure/evaluate;
 - Filling a locally recognized need;
 - Incorporating the interests of different sectors of the population;
 - If a new concept, showing how it can adopted or adapted;
 - Channeling funding through viable indigenous organizations. If not possible, show how benefits will be sustained;
 - Planning for how to deal with powerful groups with competing goals.



- Determine how the activity will contribute to sustainable development (as analyzed by USAID and host country planners):
 - Natural resources to be used (extracted, processed, modified);
 - Type of investment involved (short term, long term, human capital, infrastructure, etc.);
 - Type of accounting system for valuing resources, investments, and output, and effect of the accounting system on resource use.

- Incorporate sustainability principles such as self-financing (see box below):

Poland Enterprise Promotion and Support Center

USAID has set up a cooperative agreement with Technoserve Inc. to establish a financially sustainable and replicable local institution to serve as a support and service center as well as a catalyst for agriculturally-related enterprise development in the Tarnobrzeg District of Poland.

Technoserve provides staff and consultants to develop the EPSC's capacity to provide various fee-based services to local farmers and entrepreneurs, including analytical support, consulting advice, and technical services such as soil analysis, tractor repair, warehousing, and agricultural input supply to local farmers and entrepreneurs. The EPSC also improves linkages between key support institutions (e.g., banks, extension services) and the small-farm agribusiness sector. To date, several activities with local agribusiness establishments have been carried out and a mid-term evaluation noted that "the for-profit activities offer at least the hope of eventually providing financial support for the non-profit side of the equation" (Herne and Kilmer 1993:B-9).

- Link investments and duration of funding to time it takes to build sustainable institutions.
- Analyze the effect of procurement regulations and accountability requirements on sustainability.

Institutional/Organizational⁶

- Evaluate targetted organizations in terms of:
 - If and how they maintain or increase their level of activity;
 - If they contribute to or at least do not detract from environmentally sustainable development;
 - If they have broad-based support (men, women, different social sectors);
 - Financial viability, including an analysis of how increased funding levels will affect the organization;
 - Political viability and vulnerabilities.

Institutions "include rules or procedures that shape how people act, and roles or organizations that have attained special status or legitimacy. ...Both rules and roles can be institutionalized, the former as codes of law or custom, the latter as concrete organizations" (Brinkerhoff and Goldsmith 1990:12). *Sustainable* institutions are those that "are able to recover some of their costs or even become self-financing; supply a continuing stream of benefits; and survive over time as identifiable units."

- Look at the level of development of institutions (legal systems, NGO networks) that will channel development interventions and analyze what can realistically be done to improve their performance in helping target population to meet development goals.
- Analyze how national/local institutions involved affect the formation, maintenance, and transfer of assets to future generations for the target population.
- Distinguish between sustainability and replication phases in the life of an organization or institution (Borton 1992).

Institutional Issues in Infrastructure

Researchers from USAID's Decentralization: Finance and Management Project found that simply investing in physical infrastructure -- roads, irrigation projects, electricity, water supply, schools and other public buildings -- is insufficient as a stimulus for development. Without similar investment in social infrastructure -- the ways that individuals relate to one another -- physical infrastructure deteriorates rapidly. No one has incentive to maintain or enhance performance (Orstrom et al. 1993).

Monitoring, Evaluation

- Look at mechanisms in design, implementation, monitoring and evaluation needed to improve sustainability and move towards sustainable development:
 - Develop incentive and accountability systems that reward sustainability;
 - Identify constraints and redirect mid-course if necessary;
 - Clearly define the measurement of benefits to be sustained (including timeframes) such that these will be accepted both locally and internationally;
 - Make use to the greatest extent possible of cost-effective local resources and existing information.
- Put evaluation systems in place to evaluate activities several years after external funding ceases, and feed back lessons learned. Evaluation research should be an integral part of the activity, not an add-on.

Evaluation Concerns

Ex-post evaluations currently represent around 1-2 percent of evaluations. Project completion reports are done on only 20-25 percent of projects and then the quality is mixed. Often the intended benefits are not measured against the actual benefits. The resources have not been there to measure impact as data collection may not be systematic. The costs of maintaining information systems are high because people would rather spend money on implementation.

- Maintain central storehouse of information on and resources for sustainability/sustainable development.
- Measure benefit sustainability and use sustainability indicators creatively, multidimensionally, as informed by culture and history. Indicators should be recommended in such a way that they provide guidance and direction, and implemented in such a way as to increase our understanding of patterns of change.
- Continue work toward donor coordination and host country dialogue systems that lead to sustainable development agreements and monitoring of agreements.
- Minimize "success stories" that may lead to unsustainable expectations on the part of Congress and host countries and maximize good research and long-term community relations. Success stories should be presented within the context of the increased capacity of USAID to learn, grow and adapt.

Sector or sub-sector

- Analyze the trade-offs and links within and among sectors (e.g., economic and environmental concerns of small farmers; participation and efficiency in decision making; a government's long-term investment in human resources versus short term need for capital).
- Determine how U.S. knowledge and technology can contribute to sustainability in this sector in such a way as to be (eventually) affordable to the population.

Sectoral Issue

For child survival initiatives there may be a trade-off between impact and sustainability: vaccination assures immediate impact but may not be sustainable in certain circumstances. What levels of technology are sustainable in what circumstances? What factors increase dependency and the inability of USAID to extricate itself from unsustainable situations?

- Develop and transfer technologies that foster more efficient use of resources, and analyze their cost effectiveness in the host country setting. Look at complementary infrastructure needed for their adoption.
- Use local knowledge and practice to shape sustainable development concepts. For example, food preferences, concepts of disease, gender and generational division of labor, authority structures, decision making styles and spiritual values are all filters through which development efforts, including new technologies and ideas, must pass.

Country level

- Devise planning exercises for the host country and USAID to outline a strategy for sustainable development, including analyses of:
 - Investment mechanisms through which the population (and external investors) can finance sustainable development;
 - Types of development activities most appropriately sustained by the market or a political constituency versus those that are likely to survive only with outside assistance;
 - How communities are supported in their attempts at self-sustained development;
 - The role of the influential and powerful social groups.
- Analyze the sustainability of key governmental organizations, turnover in ministries, patterns of corruption, and viability of the government itself (in both the short term and the long term).

Policy Reform Issue

Negotiation with the Ministry of Finance might bring more sustainable outcomes even in the environmental sector than negotiation with the Ministry of Environment if allocation of financial resources for development activities takes place there.

- If government organizations are not viable, determine which organizations USAID can collaborate with. Look at the impact of governmental policies and actions (e.g., corruption, taxation, border controls) that may limit the organizations' effectiveness.

Regional/Global

"... sustained improvements in general welfare can be achieved through convergence of growth strategies for developing and developed countries" (Pierce 1993: 317).

- Analyze which development efforts should be enacted at the regional or international level; develop mechanisms for understanding sustainable resource use at these levels.
 - Communications and infrastructure constraints to creating more sustainable resource flows (e.g., which areas should be producing food, fiber, providing recreation);
 - Social sustainability analysis of creative (specialization, equal opportunity) and divisive (ethnic conflict) exploitation of human diversity; mutual respect and economic utility versus hostility and damaging competition for resources;
 - Mapping and exploitation of natural resources diversity.
- Map world-wide inequities in access to resources and efficient technology.
- Measure resource depletion, including loss of knowledge systems, institutional and analytical capabilities as well as natural resources.

E. Overarching Issues

The Rich, the Poor, the Middle Class and Sustainability

Poverty alleviation is a major theme in sustainable development. There is significant consensus that extreme poverty leads to unsustainable resource use. Research has shown that, for example, in situations of economic and political uncertainty, poor people often invest in many channels of access to resources in order to spread risk, thereby decreasing their ability to invest productively (Berry 1989). In practice, dealing with very poor and marginalized people is often management intensive and risky. Poor people and their organizations may not easily fit the criteria for "sustainable investments" in the financial and management domains. They may also live in countries having unsustainable governments and policies, thus out of reach of direct development interventions.

Poor people may be able to make good choices but lack access to resources to implement them. It may also be more difficult to measure or observe impact and thus justify investments economically. Nevertheless, sustainable investment in very poor people has been shown to be possible through institution building (e.g., the Grameen Bank model), policy

reform (e.g., recognizing community land tenure) and cooperative research activities (e.g., farmer-to-farmer type models for technology transfer).

Dealing with powerful groups, interests and elites is perhaps the greatest challenge to sustainable development, and one area in which there is the sparsest guidance. Elite interests must be mobilized and channeled toward any development effort or it risks failure, and even danger, for participants. Yet the effort cannot *solely* serve elite interests or it will most likely fail to accomplish the wider goals of increasing efficiency and promoting equity.

It is often said that development should target "the poorest of the poor" or concern itself with effects on this sector (see, for example, literature on structural adjustment in Africa). It might be more important for sustainability, however, to look at the impact of development, including policy reform, on the middle class, which represents the emerging consumer and skilled worker base.

PVOs/NGOs and Sustainability

A major question in the recent USAID discourse on sustainability is the extent to which reliance on PVOs, NGOs and the private sector as implementors fosters benefit sustainability. Does implementation through non-governmental organizations necessarily increase sustainability? First, careful analysis needs to be made of the appropriateness of certain types of organizations for performing certain functions. Should an NGO, for example, be in charge of basic education or agriculture research and extension infrastructure? If so, under what circumstances? USAID needs to ask why the government does not invest sufficiently in these sectors, and analyze the trade-offs in terms of public sector accountability and access versus private sector efficiency.

Second, the viability of organizations must be researched. There may be other trade-offs between grassroots support, on the one hand, and management/accounting skill levels on the other. Some leaders may lack the ability to attract outside funding yet command respect at the community level, while other leaders may be able to attract and use funding but not motivate their members or constituents. Funding from sources other than USAID needs to be researched, if it affects financial sustainability.

Stable investment groups found within neighborhoods, extended families, and ethnic groups ("spontaneous institutions") are often left untapped as development partners because they exist in the "informal sector" (World Bank 1993). Yet these groups may make the best development partners. Conversely, local NGOs that look very substantial may be extensions of elite control mechanisms. In many cases, to be registered as an NGO takes political clout, and the possible tax benefits may be attractive to a wide range of people.

Van Sant (1987:17) outlines both negative and positive aspects of PVOs in relation to sustainability. For example, the PVO clientele or service may be of low priority to the government, and may have limited leverage over formal systems or access to top-level

decision makers. On the other hand, PVOs adapt simple, often innovative, labor-intensive technologies to local conditions and cultivate wide information networks, local counterparts, and other institutional contacts.

The Private Sector and Sustainability

A recent public radio story on electricity in India illustrates the complexity of the relationship between sustainable development and the private sector. An electric power plant is to be built in a town outside of Bombay primarily in order to serve Bombay's burgeoning industrial sector. Environmentalists and local farmers object to the plant because it will degrade the environment. Plant developers argue that local elites in fact exploit the labor of "tribals" and other landless laborers for their farms, and that these poor people would benefit from higher paying jobs at the plant. Both sides argue that they are promoting sustainable development and helping the poor. Which segment of the private sector (farmers and plantation owners or electrical power plant owners) should receive assistance? Are the two types of benefits (electrification and environmental protection) cancelling each other out?

USAID can help countries assess the balance of equity and growth at the community and national levels. For example, environmental sustainability is threatened if businesses are "mining" natural resources when adequate measures for valuing and taxing resource depletion are not in place. Economic sustainability can be undermined by the spread of underground economies fostered by rapid structural change. The growth and soundness of civil society, a critical element of social sustainability, needs to be linked to models of and mechanisms for investment.

If a longer term, participatory approach is taken these issues can be folded into the sustainable development process of shaping a comprehensive policy towards the private sector. USAID has been involved in creating an enabling environment in countries where the private sector had been stifled and undercut. As the private sector begins to grow and develop, equity and environmental concerns will be integrated in order to assist developing countries to meet emerging world standards. Programs such as the United States-Asia Environmental Partnership (US-AEP), civil society activities, assuring community tenure and promoting education will help the process. The private sector is one engine of development and as such must be nurtured and included at all levels of decision making. **Many humanitarian activities, such as disaster relief, might achieve greater benefit sustainability if turned over to the private sector early in the process.**

Simply turning over a development activity to the private sector, however, does not assure sustainable development, even without the environmental concerns. Analysis of the proper role for the private sector must be made as part of an overall analysis of societal goals and funding sources, including governments (taxation and incentives), donors, NGOs (voluntary contributions), and private sector investment. The private sector may operate a service more efficiently, but the question of equal access to the service may arise. On the other hand, public funding can also promote inequities if elite, ethnic or regional interests are perceived to

be involved. Recent studies have analyzed the complementary roles of the public and private sectors in areas such as agricultural research and extension (e.g., for high value crops), family planning (contraceptive distribution), and telecommunications.

Issue in Private Sector Sustainability

Analysis of export promotion activities revealed that while most of the institutions were not sustainable, there is some possibility of fee for services. When and how should the market take over? There are trade-offs: in some cases, a targeted non-sustainable approach had a greater impact than membership in an institution.

Information and Sustainability

An important, and relatively neglected, issue is the role of information and communications in sustainable development. Sustainable benefits of any development effort could be enhanced through investment in improved and more equitable information flows.

Actions such as giving information access to minorities and women, and facilitating information exchanges and networks, can increase the chance that ideas or technologies will be used, modified to suit more users, and thus sustained. Fax machines were credited as a major contributor to sustained democratization efforts in former communist countries. Farmer-to-farmer networks are an effective mode of technology transfer. Electronic bulletin boards are facilitating developing country participation in ongoing debates.

U.S. leadership in communications technology, information exchange, and network building makes this investment option advantageous to U.S. organizations as well as to developing countries. USAID would benefit from exploiting these capabilities, for example by setting up a sustainability and sustainable development database that would include lessons and models from both USAID and other sources.

Research and Analysis

There is growing concern and pressure to think more longitudinally and holistically, yet few systems are in place that enable us to do so. In fact, financial strictures may make innovation and risk taking more difficult. This situation calls for creative use of existing resources, prioritization and realistic appraisal of problems and prospects. New roles and models for research and analysis can contribute to the effort to implement sustainable development.

Norgaard points out that "there have only been a few analyses of whether institutions to protect the rights of future generations have evolved in consonance with new technologies and social organizations" (1992: i). Research is being carried out to develop new theories for how economic growth and resource conservation play out within different political systems (World Bank 1993).

Anthropology and history describe civilizations that depleted their resource bases and became unsustainable, as well as cultures that sustained themselves for very long time periods. Lessons from these cases teach the relationship of sustainability to policy, type of governance, resource use systems, and cultural values. Although comparisons are difficult, given that models from history will often be drawn from small-scale or non-democratic societies, it is worthwhile to look at mechanisms for intergenerational resource transfer such as inheritance, group and institutional membership and solidarity, as well as examining values and norms in relation to consumption, stewardship, and personal responsibility.

In many societies, for example, sustainable resource management is linked to spiritual and ritual practices, as in traditional Balinese irrigation management. Inheritance of a significant resource such as land, livestock, clients and wives is linked to attainment of a certain status in the community, with accompanying responsibilities toward others, and toward the resource itself. These responsibilities can be maintained despite urbanization if a "home base" regulates the transfers. In short, we need to develop a new understanding of sustainable communities within the world system.

Toward Better Research for Sustainable Development

Make greater investment in capturing, cataloguing and analyzing local knowledge systems as well as using local scientists and research organizations. Work toward building alternative scenarios of development based on the synthesis of local and global (indigenous and scientific) knowledge bases and concepts.

Design centrally funded activities to assist scientists by supporting extensive literature searches and analyses of existing data, thus ensuring better integration and minimizing duplication. These activities are hard to fund and not prestigious (scientists prefer to do original research).

Disseminate research information using modes such as Internet conferences, folkloric, artisanal and artistic media, radio and television.

Facilitate closer collaboration between social scientists, policymakers, and biological/physical scientists to prioritize research, identify policy implications and blockages, and incorporate "adoptability factors" into technology design.

Make better use of historical, social and natural science approaches that use participatory methodologies, look at long term or cross cultural trends, and elucidate local worldviews in their own terms.

Adopt higher standards for "operational research." Too often this type of research contributes little to our knowledge of sustainability because adequate attention was not paid to sampling frame and generalizability of the data collected.⁷

Encourage and train social scientists to integrate case studies into wider data sets for broad scale applicability.

Collect baseline and monitoring data not just to measure impact but to understand shifts in group relations and resource use in relation to investments.

F. Challenges

Major challenges remain to USAID's implementation of sustainability and sustainable development concepts, including:

- developing analytic tools for integrating sectors and levels, scenario building and assessing long term viability;
- training for and developing the analytic skills of decision-makers, as well as appropriate rewards for sustainability efforts;
- maintaining an appropriate balance of research, analysis and action;

For example, a researcher will look at successful adopters of a technology but not at those who did not adopt the technology.

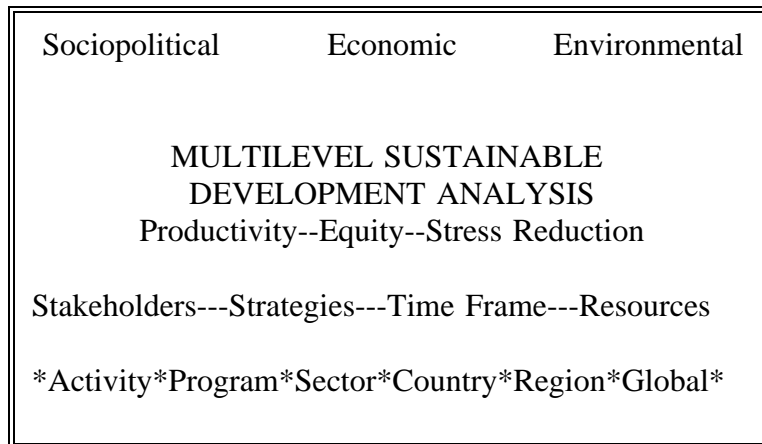
- recognizing and dealing with inherently unsustainable activities and country investments;
- analyzing conflicting national and local priorities and approaches;
- explaining sustainable development to Congress and the American people.

The issue of whether benefits continue to flow after funding ceases has to be tied to the larger questions of how activities and programs fit with U.S., host country and international objectives for sustainable development. Sustainable development must be defined at the highest level and include such considerations as national and international security, global assessment of resource use and depletion, development of and access to technology, information infrastructures, and competition over access to natural resources and markets.

At the same time, regional, national and community issues of sustainable development must be much better understood to the extent that they represent units of implementation of sustainable development activities. Systematically drawing on the growing body of sustainable development knowledge can bring viewpoints ranging from World Bank economists to village chiefs to bear on specific problems. Tools are rapidly evolving that can help development planners make sustainable development investments. These tools -- a few of which are described in Paper 4 (Sustainability in Agriculture and Natural Resource Management) -- include economic valuation of natural resources, natural resource accounting, participatory appraisal strategies and technical databases on sustainable development.

USAID's contribution to the international drive for sustainable development involves a reconsideration of the concept of the "project" through the process of re-engineering and customer service. To further maximize investments, "projects" should become tools to enable USAID, the U.S. government and the international community to learn about types of investments appropriate for a given country, region, or group to attain sustainable development.

Impact could then be redefined to include the identification of proper modes, organizations and technologies in which USAID and other organizations can make an investment through grants, cross-subsidies, endowments, cooperative agreements and other funding mechanisms that are initiated and/or supported by the private sector, NGOs/PVOs, governments and communities. This approach would mitigate the need to show development impacts after five or fewer years, a goal that may lead to non-sustainable investments. Realistic assessments of the complexity and long-term nature of the sustainable development process and the role of USAID within the context of many actors can be made and articulated to Congress, through multilevel sustainable development analyses carried out in the program development phase.



G. Conclusion

Sustainable development scenarios must be broken down into levels and objectives, and then pieced back together again. The larger objectives of increasing productivity and equity and reducing stress need to be brought to the activity level. The process of increasing sustainability of benefits must be tied to the larger process of conceptualizing sustainable development flows and resources. This section presented a preliminary outline for that process. What is now needed is a dialogue about what aspects can realistically be implemented in what time frame.

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